

CLAIMS

1. A method for visualizing changes to a system model, said method comprising the steps of:

- constructing an influence diagram including a plurality of data entities and calculation entities interconnected by arrows, where each data entity and calculation entity has a predetermined shape;
- 5 assigning a first set of data values to the data entities in the influence diagram;
- calculating output values for the calculation entities in connection with the first set of data values;
- 10 assigning a second set of data values to the data entities in the influence diagram where the second set of data values is different than the first set of data values;
- calculating output values for the calculation entities in connection with the second set of data values, and
- 15 modifying the appearance of the influence diagram to show current values or a difference between the calculations based on the first set of data values and the calculations based on the second set of data values.

2. The method according to claim 1 wherein the step of constructing an influence diagram includes forming the data entities in one image and forming the calculation entities in another image.

3. The method according to claim 1 wherein the step of modifying the influence diagram includes changing the attributes of one or more of the data entities and/or the calculation entities.

4. The method according to claim 3 wherein the step of modifying the influence diagram includes making a particular entity a predetermined size to show the magnitude of the output of the entities.

5 5. The method according to claim 4 wherein the step of modifying the influence diagram includes making the size of the particular entity relative to the magnitude of the change of the output of the particular entity for the second set of data values as compared to the output of the particular entity for the first set of data values.

6. The method according to claim 4 wherein the step of modifying the influence diagram includes making the particular entity one color if the change of the output of the particular entity is greater for the second set of data values than for the first set of data values, and making the
5 particular entity another color if the change of the output of the particular entity is less for the second set of data values than for the first set of data values.

7. The method according to claim 1 wherein the step of modifying the influence diagram includes changing the shape of a particular calculation entity if the output of the particular calculation entity is different for the second set of data values than for the first set of data values.

8. The method according to claim 1 wherein the step of modifying the influence diagram includes changing the appearance of the arrows connecting the entities.

9. The method according to claim 8 wherein the step of modifying the influence diagram includes making an arrow wider at a head

of the arrow in proportion to the change in an output of a particular calculation entity.

10. The method according to claim 1 further comprising the step of calculating an aggregate value for each of a plurality of values associated with a data entity.

11. The method according to claim 1 further comprising the steps of repeating the steps of assigning data values to the data entities for more than two sets of data values, and repeatedly modifying the influence diagram to generate a sequence of modified influence diagrams.

12. The method according to claim 11 further comprising the step of displaying the sequence of modified influence diagrams to generate an animation of a result.

13. A method for visualizing changes to a system, said method comprising the steps of:

- constructing an influence diagram including a plurality of data entities and calculation entities interconnected by arrows where the influence diagram models the operation of the system, wherein each data entity is formed to have one shape and each calculation entity is formed to have another shape;
- assigning a first set of data values to the data entities in the influence diagram;
- calculating output values for the calculation entities based on the first set of data values;
- assigning a second set of data values to the data entities in the influence diagram;

- calculating output values for the calculation entities based on the
- 15 second set of data values; and
- changing the appearance of the influence diagram to show a difference between the data entities based on data changes from the first set of data values to the second set of data values and between the calculation entities based on calculations changes from the first set of data values to the
- 20 second set of data values, wherein the step of changing the appearance of the influence diagram includes making the size of a particular entity relative to the magnitude of the change of the particular entity for the second set of data values as compared to the first set of data values, and making a particular entity a first color if the change of the particular calculation entity is greater
- 25 for the second set of data values than for the first set of data values and making the particular calculation entity a second color if the change of the particular entity is less for the second set of data values than for the first set of data values.

14. The method according to claim 13 wherein the step of changing the influence diagram includes changing the shape of a particular calculation entity if the output of the particular calculation entity is different for the second set of data values than for the first set of data values.

15. The method according to claim 13 wherein the step of modifying the influence diagram includes changing the appearance of the arrows connecting the entities.

16. The method according to claim 15 wherein the step of modifying the influence diagram includes making an arrow wider at a head of the arrow in proportion to the change in an output of a particular calculation entity.

17. The method according to claim 13 further comprising the step of calculating an aggregate value for each of a plurality of values associated with a data entity.

18. The method according to claim 13 further comprising the steps of repeating the steps of assigning data values to the data entities for more than two sets of data values, and repeatedly modifying the influence diagram to generate a sequence of modified influence diagrams.

19. The method according to claim 18 further comprising the step of displaying the sequence of modified influence diagrams to generate an animation of a result.

20. A system for visualizing changes to a system model, said system comprising:

means for constructing an influence diagram including a plurality of data entities and calculation entities interconnected by arrows, wherein
 5 said means for constructing includes making each data entity and each calculation entity a predetermined shape;

means for assigning a first set of data values to the data entities in the influence diagram;

means for calculating output values of the calculation entities in
 10 connection with the first set of data values;

means for assigning a second set of data values to the data entities in the influence diagram;

means for calculating output values for the calculation entities in connection with the second set of data values; and

15 means for modifying the appearance of the influence diagram to show a difference between the calculations based on the first set of data values and the calculations based on the second set of data values.

21. The system according to claim 20 wherein the means for constructing an influence diagram includes means for forming the data entities in one image and forming the calculation entities in another image.

22. The system according to claim 20 wherein the means for modifying includes means for making a particular entity a predetermined size to show the magnitude of the output of the entity.

23. The system according to claim 22 wherein the means for modifying includes means for making the size of the particular entity relative to the magnitude of the change of the output of the particular entity for the second set of data values as compared to the output of the particular entity
5 for the first set of data values.

24. The system according to claim 22 wherein the means for modifying includes means for making the particular entity one color if the change of the output of the particular entity is greater for the second set of data values than for the first set of data values, and for making the particular
5 entity another color if the change of the output of the particular entity is less than the second set of values than for the first set of data values.

25. The system according to claim 20 wherein the means for modifying includes means for changing the shape of a particular calculation entity if the output of the particular calculation entity is different for the second set of data values than for the first set of data values.

26. The system according to claim 20 wherein the means for modifying includes means for changing the appearance of the arrows connecting the entities.

27. The system according to claim 20 further comprising means for calculating an aggregate value for each of a plurality of values associated with a data entity.

28. The method according to claim 20 wherein the means for assigning data values repeatedly assigns data values to the data entities for more than two sets of data values, and the means for modifying includes repeatedly modifying the influence diagram to generate a sequence of
5 modified influence diagrams.

29. The method according to claim 28 further comprising means for displaying a sequence of modified influence diagrams to generate an animation of a result.